

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

RECEIVED
MAR 3 1999
FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)

Amendment of the Commission's Rules)
With Regard to the 3650-3700 MHz)
Government Transfer Band)

ET Docket No. 98-237

EX PARTE OR LATE FILED

REPLY COMMENTS OF GE AMERICAN COMMUNICATIONS, INC.

GE American Communications, Inc. ("GE Americom"), by its attorneys
and pursuant to Sections 1.415 and 1.419 of the Commission's rules, hereby
responds to the comments filed in the above-referenced proceeding. 1/

INTRODUCTION

The comments filed in this proceeding demonstrate fundamental flaws
in the *NPRM*'s proposal to allocate the 3650-3700 MHz band to the non-
Government fixed service ("FS"). Specifically:

- Satellite companies unanimously object to the *NPRM*'s failure to consider the pressing needs of fixed satellite service ("FSS") operators to use this band -- for existing services, for tracking, telemetry and control ("TT&C") operations involving new FSS satellites, and for other service expansion.
- Potential terrestrial users generally suggest that the *NPRM*'s proposed allocation is of limited value to them.
- Primary support for an FS allocation only comes from certain terrestrial equipment manufacturers who would potentially benefit

1/ In the Matter of Amendment of the Commission's Rules With Regard to the 3650-3700 MHz Government Transfer Band, ET Docket No. 98-237, Notice of Proposed Rulemaking, FCC 98-337 (rel. Dec. 18, 1998) ("*NPRM*").

No. of Copies rec'd 0+4
List ABCDE

from *any* FS allocation, yet even they tend to really have their eye on other C-band spectrum.

GE Americom's primary concern is that the pendency of this rulemaking may further delay action to establish rules for use of the extended C-band for FSS providers, and particularly for TT&C operations involving new space stations in the Ka-Band and above. GE Americom and other FSS operators previously have been encouraged by the Commission to look to the extended C-band for this function. Uncertainty created by this rulemaking is disrupting important Ka-band satellite design activity, and potentially delaying service to the public. We respectfully request that the Commission terminate this proceeding and take prompt action to make the extended C-band further available for FSS use. 2/

I. FSS PROVIDERS NEED THE EXTENDED C-BAND FOR TT&C OPERATIONS AND SERVICE LINKS.

Satellite operators and their customers are unanimous in their objection to the proposed allocation of the 3650-3700 MHz band for FS use. Collectively, they present a compelling explanation of the flaws in the *NPRM*.

First of all, other satellite operators join GE Americom in strongly objecting to the *NPRM*'s failure to recognize their long-pending *Petition for Rulemaking* seeking to use 10 MHz in the extended C-band for TT&C operations involving space stations operating above the Ku-band. 3/ The need for this

2/ As discussed further below, GE Americom is open to discussion of sharing with terrestrial services, but that analysis should not be allowed to delay use of the extended C-band for important FSS requirements.

3/ See *In the Matter of Amendment of Parts 2 and 25 of the Commission's Rules to Designate Extended C-band Spectrum for TT&C Functions of GSO FSS Systems*

allocation is well documented in the *TT&C Petition*, and more recently in the record of comments filed in support of it. Dependable TT&C communication is critical to the mission of any satellite system. ^{4/} However, parties note that TT&C operations at higher bands are not sufficiently reliable given rain attenuation and related technical concerns. The Commission has not permitted Ka-band systems to use “standard” C-band or Ku-band spectrum for transfer orbit TT&C. ^{5/} It is therefore essential that the Commission enable FSS licensees to control satellites above the Ku-band from the extended C-band.

It is also highly relevant that the *TT&C Petition* was filed after consultation with the Commission staff, and that satellite operators already have taken actions, working directly with the Commission, in reliance on the eventual use of the extended C-band for such TT&C operations. Like Hughes and others, we have assisted the Commission in making International Telecommunications Union (“ITU”) filings that cover Ka-band and V-band TT&C operations using this spectrum. ^{6/} TRW similarly observes that its Global EHF Satellite Network, a satellite system that will operate in the Ka-, Q- and V-band frequencies (all of

Operating in Bands Above Ku-band, RM No. 9411, *Petition for Rulemaking* (filed Aug. 7, 1997) (“*TT&C Petition*”).

^{4/} See Comments of Loral Space & Communications Ltd. (filed Feb. 16, 1999) (“Loral”) at 2-3.

^{5/} Comments of Hughes Communications, Inc. (filed Feb. 16, 1999) (“Hughes”) at 2.

^{6/} *Id.* at 3.

which are above the Ku-band), is specifically designed to utilize transfer orbit TT&C and emergency satellite recovery links in extended C-band frequencies. ^{7/} TRW states that it cannot move its operations to another band without incurring significant costs and service interruptions. TRW/Lockheed at 2. Similarly, Lockheed points out that its proposed Astrolink system, which consists of nine geosynchronous satellites providing global coverage in the Ka-band from five orbital locations, will need to utilize the extended C-band to conduct its own TT&C operations. *Id.*

Overall, there are now several dozen authorized FSS satellites, or applications for new satellites, that will require use of the extended C-band for TT&C operations. *Id.* at 3. The Commission must therefore seriously reconsider its proposal to exclude FSS operations from this spectrum.

Furthermore, the Commission should take careful note of the need for extended C-band use for service links. It is difficult to square the *NPRM* with the Commission's *Plan for Spectrum Reallocation*, which states that a shift in the use of the band from federal government use "may present an opportunity for greater use of this band for non-Government fixed-satellite systems." ^{8/} The 3650-3700 MHz band is adjacent to the "standard" C-band, and is a logical vehicle to alleviate C-band demand.

^{7/} See Joint Comments of TRW Inc. and Lockheed Martin Corporation (filed Feb. 16, 1999) ("TRW/Lockheed") at 2.

^{8/} See generally *Plan for Spectrum Allocation*, 11 FCC Rcd 17841 (1996).

As discussed in our initial comments, the extended C-band already is used for service links by Comsat and other parties. 9/ The Commission has already licensed some 65 earth stations in the extended C-band to access FSS space station signals, and a number of carriers have come to depend on the extended C-band in developing their future Ka-band (and other) systems. 10/ New Skies objects strongly that the Commission proposals will prevent it from making full use of two of its satellites. 11/ Similarly, Sprint “strongly opposes” the proposed changes because they “will restrict its ability to use INTELSAT service, will degrade the quality of Sprint’s services, and will have a negative impact on its competitive position.” 12/ PanAmSat notes that its PAS-21 satellite includes frequencies in the band, and that it has plans to file five additional space station applications specifying frequencies between 3650 MHz and 3700 MHz. 13/

The *NPRM*, then, proposes to move in exactly the wrong direction. Rather than freezing use of the extended C-band for FSS use, the Commission

9/ Comments of Comsat Corporation (filed Feb. 16, 1999) (“Comsat”) at 3; Loral at 3.

10/ See, e.g., Comsat at 5-6; see also Comments of EchoStar Communications Corporation (filed Feb. 16, 1999) (“EchoStar”) at 1-2 (noting that its Directsat Corporation subsidiary already uses the extended C-band to perform TT&C functions for a DBS satellite located at 119.05° W.L.).

11/ Comments of New Skies Satellites N.V. (filed Feb. 16, 1999) (“New Skies”) at 2-3.

12/ Comments of Sprint Corporation (filed Feb. 16, 1999) (“Sprint”) at 1-2.

13/ Comments of PanAmSat Corporation (filed Feb. 16, 1999) (“PanAmSat”) at 5.

should be allocating the 3650-3700 MHz band more freely to FSS providers to begin to rectify the need for additional C-band spectrum. *See, e.g., PanAmSat* at 5. As the *NPRM* points out, the 3500-3700 MHz band is allocated internationally to fixed satellite (space-to-Earth) services on a worldwide, co-primary basis. *NPRM* at ¶ 9, n. 3. The flexibility and commercial success of FSS providers is linked directly to this international allocation. ^{14/} It should be available for FSS use in the United States as well.

In short, the record demonstrates that the appropriate use of the 3650-3700 extended C-band is for FSS. The Commission should move promptly to allocate use of the spectrum for TT&C operations, lift the current freeze, and open the band to additional service use in the future.

II. THE EXTENDED C-BAND IS NOT WELL-SUITED TO FWA AND OTHER BROADBAND, WIRELESS FIXED SERVICES

The record here not only demonstrates a compelling FSS need for this band; it also demonstrates that the proposed allocation is of little value to terrestrial users.

First of all, GE Americom would reiterate that the Commission already has allocated sufficient spectrum in other bands for the kind of “fixed wireless” applications contemplated in the *NPRM*. ^{15/} Significantly, none of the

^{14/} As *PanAmSat* explains, satellite services are inherently international in nature. *Id.* at 6. Denying FSS operators the ability to use the extended C-band in the United States would therefore limit their ability to use this band elsewhere. *Id.*

^{15/} Comments of GE American Communications (filed Feb. 16, 1999) (“GE Americom”) at 6-7; *see also PanAmSat* at 6 (“there is already an abundance of

commenters present a serious showing that additional spectrum is required for this service.

Second, even the Commission's intended beneficiaries describe problems with the 3650-3700 MHz band that make it of questionable utility for fixed wireless use. SBC, for example, states that "such frequencies are the wrong size and wrong location for any meaningful development of [fixed wireless access] (FWA)." ^{16/} Airspan, a fixed service equipment manufacturer, believes that the proposed allocation "would discourage rather than encourage the near term introduction of wireless technologies . . . because 50 MHz is not sufficient bandwidth for the current proprietary CDMA FDD technologies. ^{17/} SR Telecom, another equipment manufacturer, agrees, stating that the immediate deployment of

spectrum . . . available and well-suited for precisely the terrestrial services now proposed for the extended C-band") (citing the 1300 MHz of spectrum available for LMDS services at or around 28 GHz, the 5 GHz of spectrum in the V-band between 37-51.4 GHz that will be available for fixed wireless services, as well as the 39 GHz band).

^{16/} Comments of SBC Communications Inc. (filed Feb. 16, 1999) at 1.

^{17/} Comments of Airspan Communications Corporation (filed Feb. 16, 1999) ("Airspan") at 1. Frequency Division Duplex ("FDD") must utilize either time division multiple access ("TDMA") or code division multiple access ("CDMA") in paired spectrum to provide for the rapid deployment of two-way services. Though readily available today, these technologies generally require between 50 MHz and 100 MHz between the transmit and receive frequencies in order to operate effectively. The 50 MHz of spectrum allotted by the Commission to FWA is therefore not suitable to this technology. A different technology, Time Division Duplex ("TDD"), is capable of operating effectively within 50 MHz of spectrum; however, this technology is not currently available and would require a relatively long lead time for product development. *See generally* Comments of SR Telecom Inc. (filed Feb. 16, 1999) ("SR Telecom") at 6-7.

existing wireless fixed service technology would require an additional 50 MHz of spectrum, at least 100 MHz removed from the 3650-3700 MHz band, to operate effectively. SR Telecom at 7.

According to Lucent, the *NPRM*'s proposed allocation is deficient because it would not permit FWA providers to meet future service requirements. 18/ Specifically, using current technologies, the 50 MHz of spectrum being made available to FWA providers would do little more than enable them to offer voice telephony and medium-speed data services. Lucent at 3. These services, however, would not present significant improvements over currently available services (*e.g.*, landline voice telephony, digital subscriber line, and cable modem services).

Finally, the Commission should keep in mind that satellite services will provide "fixed wireless" applications themselves. As Loral correctly points out, Ka-band satellite systems are being designed to offer reliable, ubiquitous and affordable broadband services, including high-speed Internet service and digital access to telemedicine, distance learning, and multimedia services. Loral at 5. Particularly given the FS problems noted above, the Commission should use the extended C-band for TT&C operations required by satellite-based "fixed wireless" access.

In the end, the FS advocates in this docket clearly are not enthusiastic about the *NPRM*'s unsolicited offer of the extended C-band. To the extent that they

18/ Comments of Lucent Technologies, Inc. (filed Feb. 16, 1999) ("Lucent") at 3 (stating that the 50 MHz at the end of the 3650-3700 MHz band is "the wrong size and the wrong location for any meaningful development of FWA").

seek additional spectrum at all, they primarily use this occasion to argue for access to the 3400-3600 MHz band. ^{19/} Their request for this spectrum is completely inappropriate and should be dismissed outright.

First of all, the 3400-3600 MHz band is a government-use only band that is under the authority of the National Telecommunications & Information Administration. The Commission therefore does not have the right to reallocate it. Second, and more importantly, if the Commission ever obtained jurisdiction over this band, it would be well-advised to consider allocating it to FSS rather than FS. As described by GE Americom and others, the conventional C-band is filled to capacity, and satellite service providers therefore need the spectrum more than FS licensees, who can look to other bands already available for this application. Finally, if, as Nortel suggests, the Commission ever does entertain the thought of reallocating the 3400-3700 MHz band under the auspices of “harmonizing” it with the ITU, it should remember that this band is allocated on a co-primary basis internationally to both FS and FSS; satellite service providers would therefore have to be considered in any reallocation.

In any event, the Commission should not adopt its proposed FS allocation here. GE Americom remains open to consideration of some way to share

^{19/} See, e.g., SBC at 1; *see also* Comments of Northern Telecom Inc. (filed Feb. 16, 1999) (“Nortel”) at 2 (urging the Commission “harmonize” the 3400-3700 MHz band with the ITU).

FSS use of the extended C-band with FS operators. 20/ However, development of any such sharing plan would require careful study, and must not be done at the expense of crucial FSS requirements.

CONCLUSION

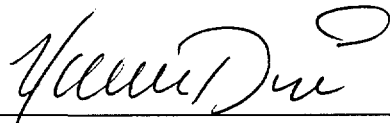
The record here confirms that the extended C-band is needed for TT&C operations and service links. Even proponents of the fixed services have all but conceded that the *NPRM*'s proposed allocation will not adequately accommodate the development of FWA and other wireless services. In these circumstances, the Commission should promptly conclude this proceeding, lift the current freeze, and take immediate action to allocate the extended C-band to FSS use.

Respectfully submitted,

GE AMERICAN COMMUNICATIONS

Philip V. Otero
Senior Vice President
and General Counsel
GE American Communications, Inc.
Four Research Way
Princeton, NJ 08540
(609) 987-4000

By:


Peter A. Rohrbach
Yaron Dori
Hogan & Hartson, L.L.P.
555 Thirteenth Street, N.W.
Washington, D.C. 20004
(202) 637-5600

Its Attorneys

20/ See, e.g., EchoStar at 4-5; Lockheed at 7; Comments of Motorola (filed Feb. 16, 1999) at 3-4.

DOCUMENT OFF-LINE

This page has been substituted for one of the following:

- o An oversize page or document (such as a map) which was too large to be scanned into the ECFS system.
- o Microfilm, microform, certain photographs or videotape.
- Other materials which, for one reason or another, could not be scanned into the ECFS system.

The actual document, page(s) or materials may be reviewed by contacting an Information Technician. Please note the applicable docket or rulemaking number, document type and any other relevant information about the document in order to ensure speedy retrieval by the Information Technician.

One diskette.